



neptune SFT 100™

Mass Flow Transmitter

DESCRIPTION

The NexGen® SFT-100™ Mass Flow Transmitter interfaces with the entire family of Red Seal mass flowmeter transducers. The SFT 100 provides direct measurement of mass, density and temperature and calculated measurements of volume, standard volume, percent concentration/solids and concentration/solids total.

The SFT 100 is unmatched in terms of user-friendliness and its flexibility to interface with your control system. The integral batching function and local keypad/display allow for safe, trouble-free hazardous area batching. The microprocessor-based SFT is configurable in the field via the integral keypad/display, hand-held configurator or Nexlink™ PC software.

DESIGN FEATURES

The Red Seal SFT 100 offers the ultimate in communications flexibility, with three design levels that offer only the features that you need for your application:

1. Blind transmitter: Two analog/one pulse output and the RS485 option
2. Digital communications: Modbus
3. Local interface: Either of the first two levels with a local keypad and display

The local interface configuration allows you to safely perform all programming functions in a hazardous area, including batching, from the keypad without external modules.

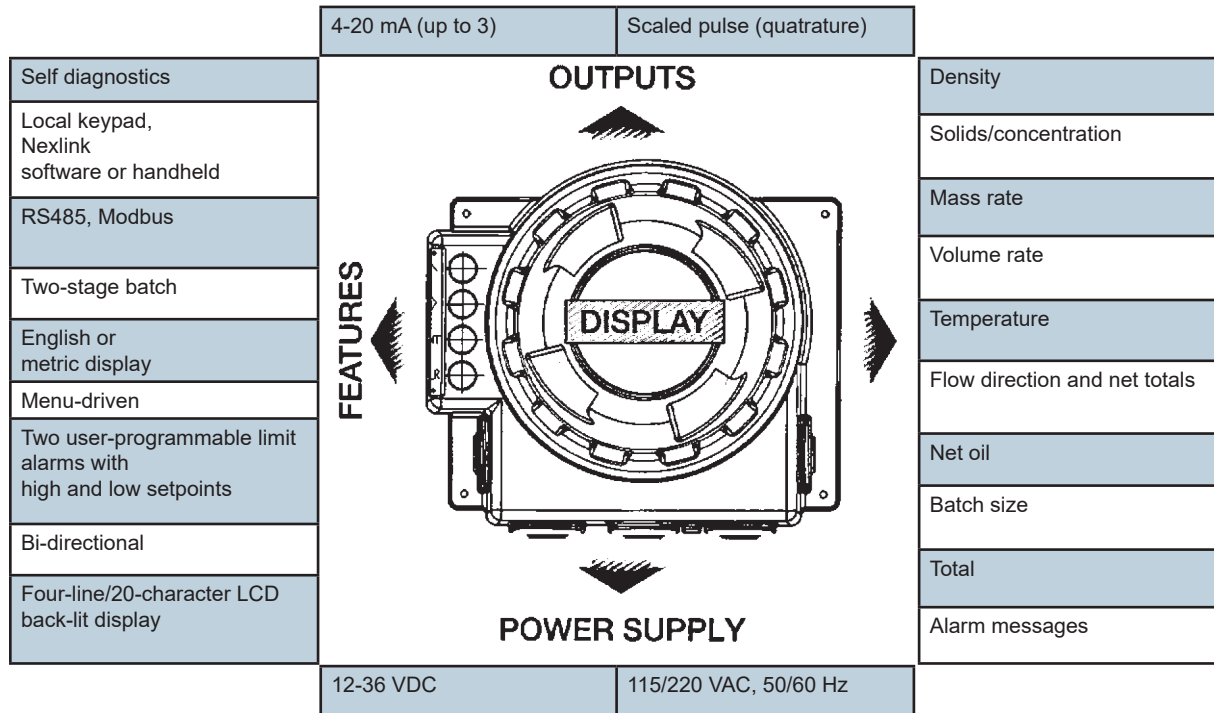
Regardless of how your application needs may change over time, you will never outgrow the SFT 100's versatile communications capabilities. Communications options may be added at any time without the trouble and cost of installing external modules or accessories.



- Measures mass flow rate and total mass, density, temperature, standard and actual volumetric flow rate and total volume; and percent solids/ concentration and solids mass flow rate and total
- Patented Digital Signal Processing (DSP) technology
- Value-added design allows the user to select only the necessary options
- Offers preset (two-stage) batch control in explosion-proof/flameproof area from local keypad/display
- Standard Modbus/RS485
- Diagnostic self-check capability
- Two or three analog outputs; one pulse (quadrature) output
- Accuracy, repeatability and reliability with 100:1 turndown

| | |
|---|--|
| Housing Temperature rating Housing LCD display LCD display (Custody Transfer option) Power supply Max. length, signal cable | Aluminum IP 66, NEMA 4X, 7 and 9 -40 to 60°C (-40 to 140°F) -20 to 60°C (-4 to 140°F) -30 to 60°C (-22 to 140°F) 115 or 230 VAC ± 15%, 50/60 Hz ± 5%, 12-36 VDC ± 15% 300 m (1000) Belden 89892 8-conductor (4 shielded, twisted pairs) |
| Hazardous area approvals (optional) | CSA/US, LCIE (ATEX) |
| Operator interface | Front panel keypad and LCD display (optional) Modbus and NexLink PC software digital communications (optional) Handheld configurator |
| Configuration (local or remote) | Display format, engineering units, system constants, scaling factors, output ranges, alarm set points, serial communication parameters, batch presets |
| Function commands | Display, interrogate, run, program, zero, calibrate, reset totals, clear alarms, initiate measurement |
| Local display (optional) Flow Range Data retention Fault diagnostics Alarms Serial communications Communications protocols | 4-line, 20-character alphanumeric, back-lit LCD; displays mass and volume flow rate and totals, density, temperature, percent solids and solids flow rate Per transducer specifications Program flash application, battery-backed RAM By error message display and/or alarm outputs (2) user-configured for specific outputs or one system alarm; galvanically isolated to 3.75 kV. Output 0 to 120 VDC/AC ± 10% and 100 mA maximum RS485; adjustable baud rate 110, 300, 600, 1200, 2400, 4800 or 9600 bps Modbus (standard), |
| Performance Specifications | Mass Accuracy: ± 0.10% of rate ± zero stability Mass Repeatability: ± 0.10% of rate (m400: ± 0.05%) Density Accuracy: per transducer specifications Temperature Accuracy: ± 0.56°C (± 1°F) |
| Outputs (user-configurable) Standard Optional Mass flow rate Mass flow total Density Temperature Concentration Volume flow rate Two-stage batch control Remove Start/Stop | (2) 4-20 mA: isolated, 0 to 1000 ohms load (1) scaled pulse (quadrature) output for mass or volume total, 0-10 KHz (1) additional 4-20 mA g, kg, tonne, oz, lb in time units of seconds, minutes or hours g, kg, tonne, oz, lb (user-programmed custom units) g/cc, lb/f ³ , kg.m ³ , API °C, °F % of total mass flow rate and total, brix, baume Litre, m ³ , cm ³ , U.S. gal, bbl, in time units of seconds, minutes or hours (2) galvanically isolated to 3.75 kV photo relays with 35-ohm ON resistance, 0 to 120 VDC/AC ± 10% and 100 mA maximum Independent monetary contact |
| Manufacturer Instrument model number | Red Seal Measurement SFT 100-XXXX (refer to Ordering Information, p. 3) |
| Red Seal Measurement pursues a policy of continuous development and product improvement. The specifications in this document may therefore be changed without notice. | |

DIGITAL SIGNAL PROCESSING



MATERIALS OF CONSTRUCTION

Housing: NEMA 4X, 7&9 aluminum

Shipping weights:

| | |
|-------------------------|-----------------|
| Blind | 6.4kg (14.1 lb) |
| LCD display less keypad | 7.1kg (15.6lb) |
| With display and keypad | 7.1kg (15.6lb) |

NexGen SFT100 MASS FLOW TRANSMITTER ORDERING INFORMATION

| MODEL NUMBER | | DESCRIPTION |
|--------------|---------|------------------------------------|
| SFT100 | X X X X | |
| | 0 | Display |
| | 1 | Blind - No Display |
| | 2 | LCD Display with Functions Keys* |
| | | LCD Display without Functions Keys |
| | 0 | Approvals |
| | 2 | None |
| | | CSA |
| | 1 1 | Option-Card |
| | 0 0 | 4-20 mA output |
| | | None |
| | 0 0 0 | Software |
| | 1 0 0 | Generic |
| | 2 0 0 | Weights & Measures** |
| | | Net Oil |

AGENCY APPROVALS

| AGENCY | TRANSDUCER ¹ and SFT 100 |
|--|---|
| CSA/US | Class I, II, III, Div. 1, Groups C, D, E, F & G Div. 2, Groups A, B, C, D, E, F, & G |
| LCIE (ATEX) | Ex II 2 G EEX d [ia] IIB T6 |
| ¹ See Transducer Technical Specifications (TS) Sheets for applicable Intrinsic Safety ratings | |
| Approved | |

Temperature classes and ambient temperature limits for the NexGen are as follows:

CSA, Explosion-proof: T6 and -20 to +65°C

CSA, Non-incendive: T4 and -20 to +65°C

LCIE (ATEX): T6 and -20 to +65°C

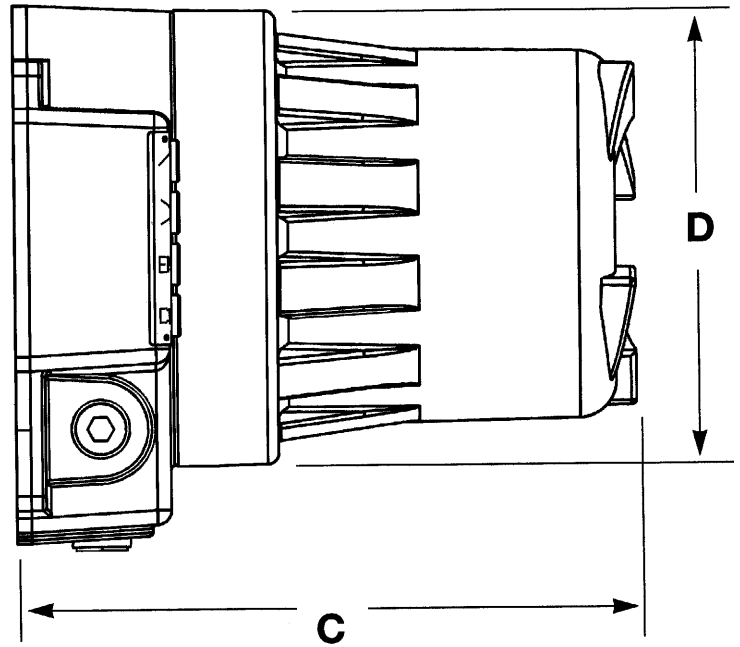
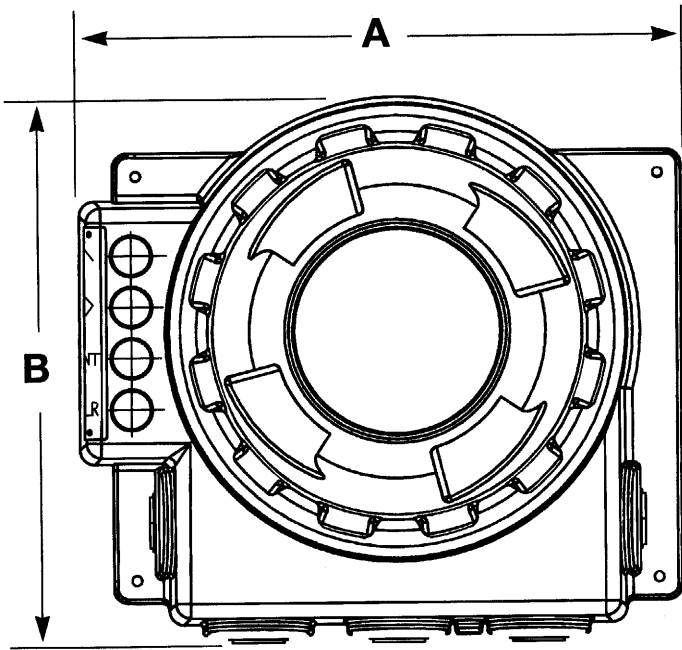
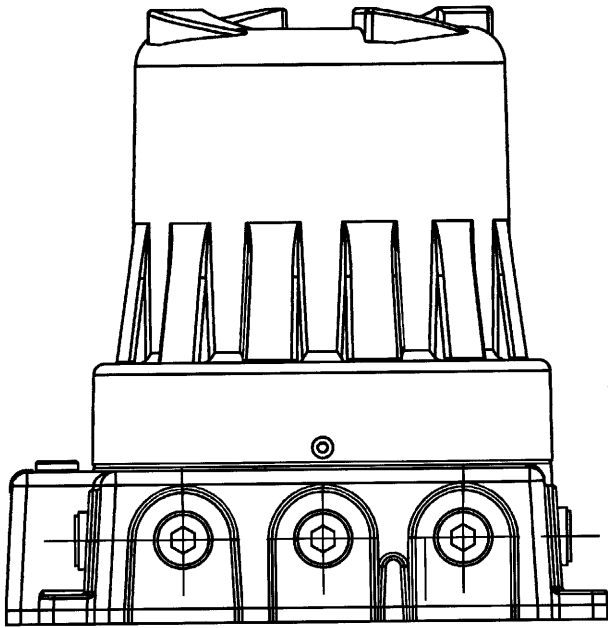
Note * This model is not approved by W&M for custody transfer applications.

** For Canadian and Non-NTEP state applications only.

** W&M requires extended temperature display.

DIMENSIONAL DATA, mm (in.)

| VERSION | A | B | C | D |
|-------------------------|------------|-----------|-------------|-----------|
| Blind | 259 (10.2) | 234 (9.2) | 233 (9.2) | 184(7.2) |
| LCD display less keypad | 259 (10.2) | 234 (9.2) | 268 (10.53) | 184 (7.2) |
| With display and keypad | 259 (10.2) | 234 (9.2) | 268 (10.53) | 184 (7.2) |



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